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PRODUCTION OF A MALIGNANT GROWTH IN A GUINEA PIG*

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The purpose of this report is to place on record the production of metastatic malignancy in one of a group of guinea pigs inoculated with a culture containing a spore-bearing microorganism which was isolated, on special medium, from the tissue of a microscopically proved carcinoma of a human breast. The microorganism was again recovered from the malignant tissue of the animal herein reported.

A detailed report will be made at a later date, giving the findings on the remainder of this group of guinea pigs, as well as on a series of other experimental animals inoculated with the same microorganism.

The inoculation of the culture was made in the mammary region of an adult female guinea pig (a discarded breeder) on November 5, 1932. The animal was observed at frequent intervals until sacrificed.

On November 8, a rather evenly distributed infiltration was noted in the region of inoculation. This slowly became localized into a well-defined indurated mass about 2.3 cm in width and 3.4 cm in length. It was noted on December 22 that isolated nodular areas were developing in the region.

On January 9, 1933, the nodules were noted as enlarging and the inguinal glands were distinctly palpable about two weeks later.

On February 20, 1933, the nodular areas in the breast region and the glands in the inguinal region had increased in size. On February 24 weakness of the animal was noted, other conditions remaining substantially the same.

On February 28, the animal was very weak and was chloroformed. The gross postmortem findings were as follows:

Breast area (primary site).—Lobulated, nodular tumor masses in breast region covering an area 3.4 cm in length by 2.5 cm in width and showing invasion of anterior and posterior inguinal fatty structures and involving the musculature of the anterior abdominal wall. The depth of the tumor mass measured approximately 2.5 cm. Section of the primary tumor disclosed a pearly gray, fleshy, myxomatous, diffusely infiltrating tumor mass.

* From the National Institute of Health, Washington, D. C.

Inguinal area.—Enlarged bulging glands 1.6 cm by 8 mm in diameter, of same gross appearance as primary masses.

Large and small bowel.—Grossly negative.

Stomach.—Grossly negative.

Omentum presents scattered, diffuse, and nodular areas of tissue having the same appearance as the primary growth and varying in size from 1 mm to 8 mm in diameter.

Kidneys.—Both kidneys appear essentially normal, except that in one a minute, elongated, grayish focus is seen in a pyramid.

An enlarged gland at the renal level to the right of the spinal column presents the same gross appearance as the primary and omental masses. It is 3 mm in diameter.

Lungs.—Present scattered areas of pneumonic consolidation.

Chest wall.—Two enlarged retrosternal glands, 1.4 cm by 5 mm in diameter, presenting same gross appearance on section as primary and metastatic masses.

The following report on the microscopic findings in this guinea pig was submitted by Surg. R. D. Lillie, of the United States Public Health Service, in charge of the work in pathology at the National Institute of Health:

(NIH 3161—Guinea pig 117 x 17)

Inguinal mass, primary.—The tumor is composed of lobules and alveoli of large polygonal cells with highly vacuolated, foamy, hydropic, faintly metachromatic cytoplasm and small leptochromatic or oxyphil karyolytic nuclei, the cells frequently disintegrating to form clear spaces containing faintly oxyphilic, markedly metachromatic rings about the size and shape of the nuclei in better preserved cells. The lobules rest in a delicate collagenous reticulum which does not extend into them. Scattered, atrophic, striated muscle fibers are included in parts of the mass, and there is some marginal invasion of the underlying muscle. Some fibrous trabeculae run through the mass and contain ducts lined by cuboidal, stratified cuboidal, and stratified squamous epithelia, often containing pus and surrounded by a variable amount of lymphocyte infiltration.

Lateral inguinal mass, contiguous with primary.—Similar in structure to the primary, except that no ducts are included. No lymphadenoid tissue is identified in this block.

Omentum.—Similar in structure to the primary tumor, but shows less nuclear degeneration and contains no ducts.

Stomach (antrum).—No lesions.

Esophagus.—Normal.

Liver.—Slight, irregular periportal fibrosis in left lobe, slight periportal lymphocyte infiltration in both lobes.

Kidneys.—There are occasional small, sometimes intraglomerular, nodules of tumor tissue, similar to that found in the primary growth.

Subdiaphragmatic preaortic lymph node.—Partially replaced and infiltrated by masses of lobules and acini of large, foamy, disintegrating polygonal cells, with karyolyzing nuclei, lying in a delicate collagenous reticulum.

Anterior mediastinal mass.—Confused mass of acinous glandular tissue as in the inguinal tumor, scar tissue, lymphadenoid tissue, recent and encapsulating abscesses and foci of plasma and lymphoid cell infiltration.

Retrosternal lymph nodes.—Largely replaced by masses of large acini lined by disintegrating large polygonal foamy cells with karyolytic nuclei.

Trachea.—Slight lymphocyte infiltration of mucosa and pus in lumen.

Peritracheal lymph gland.—Oedema, an abscess filled with a loose fibrinopurulent exudate and partially walled off by an incomplete zone of epithelioid cells, and reticuloendothelial proliferation in part of the marginal sinus. The oedematous mediastinal fat contains occasional clumps of large cells of epithelial type, lying apparently in lymphatic spaces.

Lung (right lower).—Nodular consolidation characterized by purulent bronchial and alveolar exudation, sometimes associated with septal swelling and proliferation, patches of serous alveolar exudation, moderate focal perivascular lymphocyte infiltration. Single, small, apparently intraalveolar nodule in unconsolidated area composed of loosely packed vacuolated stellate cells with broad cytoplasm containing a few carbon granules and leptochromatic vesicular nuclei with minute nucleoli. On three sides the nodule is surrounded by a thin collagenous lamella which does not penetrate the nodule, the fourth side abuts on a free space. The other lobe sectioned (*left upper*) shows a similar though less extensive purulent bronchitis and bronchopneumonia, focal atelectasis and septal thickening and focal perivascular lymphocyte infiltration.

COMMENT

The new growth has apparently arisen in breast tissue, resembles lactating mammary acini in histologic structure, and is identical in structure in the primary and in the various metastatic masses. In the invasion and destruction of muscular tissue and in the production of distant metastases it fulfills two of the criteria of malignancy. Differentiation appears to be of high grade; anaplasia, conversely, slight.

Diagnosis.—Malignant adenoma with metastases in lymph nodes, omentum, and kidneys.

SICKNESS AMONG MALE INDUSTRIAL EMPLOYEES DURING THE FINAL QUARTER OF 1932¹

By DEAN K. BRUNDAGE, *Statistician, Office of Industrial Hygiene and Sanitation, United States Public Health Service*

The influenza epidemic during the fourth quarter of 1932 caused a higher rate of sickness which disabled for eight consecutive calendar days or longer than was recorded for the like period of each of the three preceding years among a sample group of male industrial employees. The industrial establishments included are identical for 1932 and 1931, and for 1929 and 1930 a large majority of the establishments under consideration was the same. If the amount of the excess sickness frequency from influenza or grippe is deducted from the rate of total sickness, one finds that the frequency of sickness exclusive of influenza was just about the same as in the corresponding quarter of 1930 or 1931. Pneumonia as well as influenza increased in frequency in the fourth quarter of 1932, but the pneumonia rate was still below that recorded for the like quarter of 1929.

The frequency of diseases of the digestive system as a whole was practically the same as in the fourth quarter of 1931. The rate for diseases of the skin continued to be favorable. An increase in the frequency of diseases of the heart and arteries and genito-urinary diseases mentioned in the report for the third quarter of 1932 occurred also in the fourth quarter. Whether the indicated increase is real or due merely to a larger proportion of older employees on the pay roll at the present time, it is impossible to say.

These sickness data apply in the main to employed men, although many of them work only on a part-time basis. Only a small proportion are unemployed, as membership usually ceases soon after employment is terminated. The reporting establishments are scattered all over the United States, although a preponderance of them lies east of the Mississippi and north of the Ohio Rivers.

¹ The report for the third quarter was published in the Public Health Reports for Dec. 16, 1932.

TABLE 1.—Frequency of disability lasting eight calendar days or longer in the fourth quarter of 1932 compared with the same quarter of 1931, 1930, and 1929. (Male morbidity experience of 32 industrial companies which reported their cases to the United States Public Health Service during all four years)¹

Diseases and disease groups which caused disability. (Numbers in parentheses are disease title numbers from the International List of the Causes of Death, Fourth Revision, Paris, 1929)	Annual number of disabilities per 1,000 men in fourth quarter of —			
	1932	1931	1930	1929
Sickness and nonindustrial injuries ²	100.0	84.3	87.2	96.6
Nonindustrial injuries.....	13.6	13.5	13.0	13.1
Sickness ²	92.4	70.8	74.2	83.5
Respiratory diseases.....	46.1	25.2	27.6	37.1
Influenza and grippa (11).....	30.5	10.7	11.6	15.1
Bronchitis—acute and chronic (106).....	3.5	3.3	4.2	6.2
Pneumonia—all forms (107-109).....	2.8	1.7	2.5	3.1
Diseases of the pharynx and tonsils (115a).....	3.8	4.5	4.3	6.8
Tuberculosis of the respiratory system (23).....	.7	.8	.8	1.1
Other respiratory diseases (104, 105, 110-114).....	4.8	4.0	4.2	4.8
Nonrespiratory diseases.....	46.3	45.6	46.6	46.4
Diseases of the stomach, cancer excepted (117, 118).....	3.5	3.8	3.9	3.7
Diarrhea and enteritis (120).....	1.1	1.2	1.5	1.4
Appendicitis (121).....	3.4	3.6	3.4	3.8
Hernia (122a).....	1.7	1.5	2.1	1.3
Other digestive diseases (118b, 116, 122b-129).....	3.4	2.9	2.9	2.5
Rheumatic group, total.....	10.6	9.9	10.4	12.1
Rheumatism—acute and chronic (56-58).....	4.7	4.4	4.9	6.0
Diseases of the organs of locomotion (156b).....	3.5	3.4	3.3	4.0
Neuralgia, neuritis, sciatica (87a).....	2.4	2.1	2.2	3.1
Neurasthenia and the like (part of 87b).....	1.1	1.4	1.2	1.1
Other diseases of the nervous system (75-85, part of 87b).....	.8	1.2	1.0	1.1
Diseases of the heart and arteries and nephritis (90-99, 102, 130-132).....	3.8	3.5	3.5	3.7
Other genito-urinary diseases (133-138).....	2.4	2.4	2.3	2.1
Diseases of the skin (151-153).....	2.6	3.1	3.7	3.5
Epidemic and endemic diseases except influenza (1-10, 12-14, 33, 37, 38, part of 39 and 44).....	1.5	1.7	1.6	1.8
Ill-defined and unknown causes (200).....	3.2	2.0	1.6	1.7
All other diseases (19-22, 24-32, 36, part of 39 and 44, 40-43, 45-55, 59-77, 83, 89, 100, 101, 103, 154-156a, 157, 162).....	7.2	7.4	7.5	6.6
Average number of males covered in the record.....	127, 185	158, 090	154, 165	160, 023
Number of companies included.....	32	32	27	23

¹ Except that the rates for 1930 and 1929 cover 27 and 23 companies, respectively, instead of 32, as in 1931 and 1932. The rates presented here for the corresponding period of preceding years differ somewhat from those shown in earlier publications because data for additional groups have become available in the meantime.

² Exclusive of disability from venereal diseases.

COURT DECISIONS RELATING TO PUBLIC HEALTH

Typhoid fever held not compensable under workmen's compensation act.—(Kentucky Court of Appeals; *Mills v. Columbia Gas Construction Co.*, 55 S. W. (2d) 394; decided Dec. 13, 1932.) An action to recover damages was brought by one who alleged that he had contracted typhoid fever while in the employ of the defendant company as a result of drinking impure water furnished him by the defendant. The defense was that the matter came under the workmen's compensation act. The trial court, taking this view, held that it was without jurisdiction of the subject matter of the action and dismissed the plaintiff's petition. On appeal the court of appeals stated that the case turned on whether the alleged injury was compensable under the compensation act.

Under such act compensation was provided for "personal injuries sustained by the employee by accident arising out of and in the course

of his employment, or for death resulting from such accidental injury," but the act also contained a provision that "personal injury by accident, as herein defined, shall not include diseases except where the disease is a natural and direct result of a traumatic injury by accident." In holding that the typhoid fever was not a compensable injury, the court differentiated the instant case from a prior decision in which it had held that tularaemia, contracted by a person while dressing rabbits in the course of his employment, was compensable. Speaking with regard to such tularaemia case, the court said that there the germs had "entered into the body through an abrasion or break in its integumentum," but that in the present case "the germs were absorbed into the system through the normal channels of entry." The court reversed the judgment of the lower court, saying:

We are clear, then, that typhoid fever resulting from the absorption of typhoid bacilli into the system through the normal channels of entry is, without more, certainly not a disease resulting naturally or directly, or indeed at all, from a traumatic injury, and, such being the case, is not a compensable injury within the meaning of our compensation act. It follows that the lower court incorrectly overruled the demurrer to the answer pleading lack of jurisdiction. Such demurrer should have been sustained. No other questions are herein decided.

Compensability of pneumonia under workmen's compensation act.—(Kansas City, Mo., Court of Appeals; *Rinehart v. F. M. Stamper Co.*, 55 S. W. (2d) 729; decided Dec. 12, 1932.) In an action for damages based on negligence, the plaintiff alleged that, while employed by the defendant company, he was ordered to work in a refrigerating plant which was maintained by the company. At that particular time, he alleged that he was perspiring freely and that, as a result of his work in the refrigerating plant, his clothing was frozen upon his body and he contracted pneumonia. The trial court, agreeing with the company's contention, held that the petition showed exclusive jurisdiction in the workmen's compensation commission and dismissed it. An appeal to the court of appeals followed.

The compensation law defined "accident" as "an unexpected or unforeseen event happening suddenly and violently, with or without human fault, and producing at the time objective symptoms of an injury." It also defined "injury" and "personal injuries" as meaning "only violence to the physical structure of the body and such disease or infection as naturally results therefrom." The act provided, too, that "The said terms shall in no case be construed to include occupational disease in any form, nor shall they be construed to include any contagious or infectious disease contracted during the course of the employment."

The appellate court affirmed the judgment of the trial court, holding that the plaintiff had alleged facts upon which the workmen's compensation commission could legally find all the elements of a compensable case under the compensation law.

Damage action for lead poisoning.—(Washington Supreme Court; *Hatcher v. Globe Union Mfg. Co.*, 16 P. (2d) 824; decided Dec. 14, 1932.) An action to recover damages for lead poisoning was brought by a person who had been employed by the defendant company in its storage battery factory. Judgment went against the company in the trial court and an appeal was taken to the supreme court. Following are certain of the points decided by the appellate court:

Adhering to former decisions, the plaintiff's remedy was held to be an action at law and not a proceeding under the workmen's compensation act.

The admission by the trial court of evidence showing alterations to certain machinery after the plaintiff had become sick and had left the defendant's employ constituted reversible error.

An instruction that the defense of assumption of risk was not available to an employer who failed to comply with the factory act with respect to the place in which he required his employees to work stated the law correctly.

Certain requested instructions which would have advised the jury that the duty imposed by law upon the employer was merely to use reasonable and ordinary care to furnish a safe place to work did not state the law correctly where the action was brought under the factory act and the evidence brought it within its provisions.

Whether the assumption of risk could have been successfully invoked as a defense was dependent primarily upon whether the appellant had made a bona fide effort to comply with the factory act.

What was said with regard to the above-mentioned requested instructions applied with equal force to certain other requested instructions which would have advised the jury that one seeking to recover damages for injuries sustained must use his own faculties and the means afforded him for his own protection and that a failure so to do barred recovery on his part.

DEATHS DURING WEEK ENDED MARCH 11, 1933

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Mar. 11, 1933	Correspond- ing week, 1932
Data from 85 large cities of the United States:		
Total deaths.....	8,505	9,410
Deaths per 1,000 population, annual basis.....	11.9	13.4
Deaths under 1 year of age.....	594	657
Deaths under 1 year of age per 1,000 estimated live births ¹	51	54
Deaths per 1,000 population, annual basis, first 10 weeks of year.....	12.4	12.4
Data from industrial insurance companies:		
Policies in force.....	68,890,681	73,537,890
Number of death claims.....	14,326	15,338
Death claims per 1,000 policies in force, annual rate.....	10.8	10.9
Deaths claims per 1,000 policies, first 10 weeks of year, annual rate.....	11.3	10.1

¹ 1933, 81 cities; 1932, 78 cities.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended March 18, 1933, and March 19, 1932

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended March 18, 1933, and March 19, 1932

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Mar. 18, 1933	Week ended Mar. 19, 1932	Week ended Mar. 18, 1933	Week ended Mar. 19, 1932	Week ended Mar. 18, 1933	Week ended Mar. 19, 1932	Week ended Mar. 18, 1933	Week ended Mar. 19, 1932
New England States:								
Maine		3	1	32	3	307	1	1
New Hampshire		2	4			6	0	0
Vermont	1	3			4	73	0	0
Massachusetts	16	42	6	9	341	479	0	3
Rhode Island	3	5	2		3	355	0	0
Connecticut	4	8	12	70	150	200	1	0
Middle Atlantic States:								
New York	49	110	21	244	4,041	2,251	1	13
New Jersey	40	22	22	205	1,536	224	1	1
Pennsylvania	70	104			1,056	2,029	5	8
East North Central States:								
Ohio	30	38	216	198	597	516	1	0
Indiana	26	39	65	294	152	65	8	10
Illinois	28	88	104	426	399	346	23	4
Michigan	33	43	6	110	1,353	942	2	6
Wisconsin	3	10	90	773	494	574	2	2
West North Central States:								
Minnesota	3	10	3	2	1,322	12	0	2
Iowa	0	9			0	4	5	0
Missouri	23	39	13	20	275	56	13	0
North Dakota	2	3			70	95	1	0
South Dakota	12	5		16	4	25	0	2
Nebraska	12	9	15	22	6	3	0	1
Kansas	7	27		3	334	240	2	1
South Atlantic States:								
Delaware	11				5	1	0	0
Maryland	7	20	36	263	3	63	1	0
District of Columbia	4	11	3	2	3	3	0	0
Virginia	13				473		3	1
West Virginia	10	14	31	378	143	626	0	0
North Carolina	15	15	69	52	506	571	0	3
South Carolina	4	8	708	1,477	217	84	0	0
Georgia	9	7	184	296	40	88	1	1
Florida	7	14	13	5	40	4	2	0
East South Central States:								
Kentucky	11	23	51	1,045	80	96	0	6
Tennessee	3	11	100	2,675	30	149	3	2
Alabama	15	9	120	66	25	1	1	1
Mississippi	7	12					0	1
West South Central States:								
Arkansas	6	8	61	282	112		2	1
Louisiana	12	23	7	22	56	56	5	3
Oklahoma	15	15	104	835	34	12	1	1
Texas	63	30	117	460	750	27	3	1
Mountain States:								
Montana	3		10	105	31	95	1	0
Idaho	1		1	2	24	2	0	0
Wyoming	1				8	5	0	0
Colorado	7	12	43		9	82	2	1
New Mexico	7	18		690	16	63	1	0
Arizona	1	2	2	27	15	2	0	0
Utah	2	1			2	1	1	0
Pacific States:								
Washington	1				51	623	0	1
Oregon	1	8	30	201	81	173	0	1
California	53	92	61	138	1,146	524	1	3
Total	660	972	2,336	11,421	16,058	12,133	96	76

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended March 18, 1933, and March 19, 1932—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Mar. 18, 1933	Week ended Mar. 19, 1932	Week ended Mar. 18, 1933	Week ended Mar. 19, 1932	Week ended Mar. 18, 1933	Week ended Mar. 19, 1932	Week ended Mar. 18, 1933	Week ended Mar. 19, 1932
New England States:								
Maine.....	0	0	13	29	0	0	1	0
New Hampshire.....	0	0	26	41	0	0	0	0
Vermont.....	0	0	13	8	0	4	0	0
Massachusetts.....	0	0	417	504	0	0	3	3
Rhode Island.....	0	0	40	50	0	0	0	1
Connecticut.....	0	0	176	125	3	0	0	0
Middle Atlantic States:								
New York.....	1	2	1,120	1,741	0	6	8	4
New Jersey.....	0	0	364	288	0	0	1	2
Pennsylvania.....	0	0	1,071	1,030	0	0	6	13
East North Central States:								
Ohio.....	1	1	1,095	349	16	38	4	9
Indiana.....	0	0	128	166	1	11	2	6
Illinois ¹	1	0	540	443	15	23	0	6
Michigan.....	1	1	608	446	1	13	2	14
Wisconsin.....	0	0	119	69	4	0	1	2
West North Central States:								
Minnesota.....	0	0	76	124	0	4	1	2
Iowa.....	0	0	35	64	36	39	0	2
Missouri.....	0	0	86	89	6	8	1	1
North Dakota.....	0	0	10	10	2	4	0	0
South Dakota.....	1	0	9	11	0	14	2	1
Nebraska.....	0	0	39	32	1	8	0	0
Kansas.....	0	0	57	48	0	4	3	0
South Atlantic States:								
Delaware.....	0	0	10	16	0	0	0	0
Maryland ²	0	0	111	136	0	0	2	4
District of Columbia.....	0	0	28	29	0	0	1	0
Virginia.....	0	1	40	0	0	0	10	0
West Virginia.....	1	0	27	38	0	0	6	10
North Carolina.....	1	1	49	62	5	3	6	3
South Carolina ³	2	0	4	6	0	0	4	4
Georgia ⁴	0	0	12	10	10	1	1	12
Florida.....	1	0	5	5	0	0	5	5
East South Central States:								
Kentucky.....	0	0	54	117	1	4	3	16
Tennessee.....	0	1	38	29	2	19	5	7
Alabama ⁵	0	0	15	22	1	17	5	7
Mississippi.....	0	1	6	11	0	31	3	6
West South Central States:								
Arkansas.....	0	0	7	11	8	22	0	1
Louisiana.....	0	0	19	21	2	3	17	14
Oklahoma ⁴	0	0	33	22	8	8	2	0
Texas ⁵	2	0	39	43	36	72	7	4
Mountain States:								
Montana.....	0	1	7	38	0	2	5	6
Idaho.....	0	0	6	9	10	4	2	0
Wyoming.....	0	0	11	12	0	0	4	3
Colorado.....	0	0	34	37	0	0	2	0
New Mexico.....	0	0	16	11	0	0	1	1
Arizona.....	0	0	15	8	1	0	0	0
Utah ⁶	0	0	10	7	0	0	1	1
Pacific States:								
Washington.....	0	0	37	29	3	13	1	1
Oregon.....	0	0	16	23	2	11	0	0
California.....	1	3	178	162	24	8	7	4
Total.....	13	12	6,882	6,571	198	394	135	169

¹ New York City only.

² Typhus fever, week ended March 18, 1933, 12 cases: 1 case in Illinois, 1 case in South Carolina, 2 cases in Georgia, 7 cases in Alabama, and 1 case in Texas.

³ Week ended Friday.

⁴ Figures for 1933 are exclusive of Oklahoma City and Tulsa, and for 1932 are exclusive of Tulsa only.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week:

State	Menin- gococ- cus menin- gitis	Diph- theria	Influ- enza	Ma- laria	Mea- sles	Pel- lagra	Polio- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
<i>February, 1933</i>										
Arizona.....	4	15	100	1	30	-----	0	64	0	5
Arkansas.....	2	30	631	42	148	50	1	50	32	13
Indiana.....	7	160	414	-----	73	-----	3	554	7	13
Maine.....	3	9	1,356	-----	9	-----	0	127	0	7
Michigan.....	7	94	93	1	3,148	-----	4	2,247	5	16
New Jersey.....	10	78	438	-----	3,559	-----	1	1,301	0	10
New York.....	19	241	-----	-----	9,310	-----	3	3,274	0	22
North Dakota.....	-----	12	545	-----	465	-----	1	67	4	0
Pennsylvania.....	23	323	-----	-----	3,765	-----	0	3,530	0	20
Tennessee.....	6	39	727	15	187	8	2	124	4	19
Wyoming.....	1	-----	4	-----	44	-----	0	21	0	0

<i>February, 1933</i>										
Chicken pox:	Cases	Mumps—Continued.	Cases	Trachoma—Continued.	Cases					
Arizona.....	109	Indiana.....	206	North Dakota.....	4					
Arkansas.....	95	Maine.....	80	Pennsylvania.....	3					
Indiana.....	593	Michigan.....	1,239	Tennessee.....	32					
Maine.....	141	New Jersey.....	815	Trichinosis:						
Michigan.....	2,112	Pennsylvania.....	1,941	New Jersey.....	3					
New Jersey.....	1,516	Tennessee.....	157	New York.....	8					
New York.....	3,397	Wyoming.....	2	Pennsylvania.....	4					
North Dakota.....	3,981	Ophthalmia neonatorum:		Tularaemia:						
Pennsylvania.....	210	Arkansas.....	2	Arkansas.....	1					
Tennessee.....	36	New Jersey.....	2	North Dakota.....	1					
Wyoming.....	19	New York.....	4	Pennsylvania.....	2					
Conjunctivitis:		Pennsylvania.....	3	Tennessee.....	2					
Wyoming.....	19	Tennessee.....	5	Undulant fever:						
Dysentery:		Paratyphoid fever:		Arizona.....	1					
Michigan.....	5	New York.....	8	Indiana.....	4					
New York.....	5	Tennessee.....	1	Maine.....	1					
Tennessee.....	4	Puerperal septicemia:		Michigan.....	6					
German measles:		Pennsylvania.....	16	New Jersey.....	7					
Arizona.....	3	Rabies in animals:		New York.....	20					
Arkansas.....	32	New Jersey.....	25	North Dakota.....	1					
Indiana.....	1	New York.....	1	Pennsylvania.....	3					
Maine.....	13	Septic sore throat:		Wyoming.....	1					
Michigan.....	1,035	Indiana.....	5	Vincent's angina:						
New Jersey.....	78	Maine.....	3	Maine.....	8					
New York.....	146	Michigan.....	37	New York.....	105					
Pennsylvania.....	33	New York.....	20	Tennessee.....	5					
Tennessee.....	58	Tennessee.....	8	Vincent's infection:						
Impetigo contagiosa:		Wyoming.....	1	North Dakota.....	8					
Tennessee.....	5	Tetanus:		Whooping cough:						
Lead poisoning:		New Jersey.....	1	Arizona.....	18					
New Jersey.....	1	New York.....	2	Arkansas.....	43					
Lethargic encephalitis:		Pennsylvania.....	3	Indiana.....	136					
Michigan.....	5	Tennessee.....	2	Maine.....	70					
New Jersey.....	2	Trachoma:		Michigan.....	1,190					
New York.....	5	Arizona.....	59	New Jersey.....	460					
Pennsylvania.....	2	Arkansas.....	6	New York.....	1,919					
Tennessee.....	3	Indiana.....	1	Pennsylvania.....	991					
Mumps:		New Jersey.....	20	Tennessee.....	94					
Arizona.....	79			Wyoming.....	22					
Arkansas.....	36									

¹ Exclusive of New York City.

WEEKLY REPORTS FROM CITIES

City reports for week ended March 11, 1933

State and city	Diph- theria cases	Influenza		Mea- sles cases	Pneu- monia deaths	Scar- let fever cases	Small- pox cases	Tuber- culosis deaths	Ty- phoid fever cases	Whoop- ing cough cases	Deaths, all causes
		Cases	Deaths								
Maine:											
Portland	0		0	0	1	4	0	0	0	0	24
New Hampshire:											
Concord	0		0	0	0	1	0	2	0	0	8
Manchester	0		1	0	0	4	0	0	0	0	22
Nashua	0		0	3	0	0	0	0	0	0	
Vermont:											
Barre	0		0	0	1	0	0	3	0	6	8
Burlington	0		0	0	0	0	0	0	0	0	6
Massachusetts:											
Boston	14		1	64	20	97	0	13	0	61	240
Fall River	2		0	0	4	10	0	3	0	10	41
Springfield	0		0	1	2	12	0	1	0	32	47
Worcester	1		1	13	6	32	0	2	0	6	57
Rhode Island:											
Pawtucket	0		0	0	1	0	0	0	0	0	16
Providence	2	2	1	0	7	16	0	3	0	33	76
Connecticut:											
Bridgeport	0	1	0	12	2	13	0	1	1	0	25
Hartford	1	1	0	7	2	4	0	0	0	5	34
New Haven	0		0	2	4	1	0	2	0	7	53
New York:											
Buffalo	4		1	19	0	53	0	10	0	28	158
New York	45	30	14	1,867	192	358	0	87	7	128	1,612
Rochester	1		0	1	3	34	0	1	0	10	68
Syracuse	0		0	0	3	33	0	2	0	46	43
New Jersey:											
Camden	1	1	0	1	1	12	0	1	0	0	24
Newark	0	5	0	389	6	39	0	11	0	43	96
Trenton	0	2	0	7	4	21	0	4	0	3	39
Pennsylvania:											
Philadelphia	3	6	5	82	51	156	0	32	2	4	474
Pittsburgh	5	4	2	2	20	56	0	10	0	22	180
Reading	0		1	73	1	15	0	1	0	1	29
Scranton	0			0		18	0		0	0	
Ohio:											
Cincinnati	1		9	5	11	41	0	3	0	1	139
Cleveland	5	117	2	2	16	210	0	8	1	20	213
Columbus	1		0	107	4	13	0	7	0	0	85
Toledo	4		0	177	6	89	0	2	0	1	81
Indiana:											
Fort Wayne	0		0	0	0	8	0	0	0	0	18
Indianapolis	6		1	61	15	19	0	6	0	10	
South Bend	0		0	0	0	10	0	0	0	17	17
Terre Haute	0		0	0	3	11	0	1	0	0	21
Illinois:											
Chicago	4	11	6	236	67	260	0	45	0	16	656
Springfield	0		0	0	2	8	0	0	0	0	28
Michigan:											
Detroit	16	1	0	543	24	187	0	22	0	95	259
Flint	2	8	0	82	3	5	0	1	0	4	20
Grand Rapids	0		0	3	3	12	0	1	0	36	37
Wisconsin:											
Kenosha	0		0	0	0	1	2	0	0	4	3
Madison	0		1	85	0	5	0	1	0	0	8
Milwaukee	3	2	2	6	9	49	0	4	0	65	69
Racine	3		0	0	0	8	0	1	0	11	3
Superior	0		0	0	0	0	0	0	0	11	5
Minnesota:											
Duluth	0		0	7	2	0	0	3	0	31	29
Minneapolis	1		0	690	5	29	0	3	0	15	108
St. Paul	1		0	319	2	21	0	4	0	48	60
Iowa:											
Des Moines	2			0	0	4	0		0	0	33
Sioux City	2			2		2	0		0	6	
Waterloo	1			0		0	1		0	1	
Missouri:											
Kansas City	0		0	197	18	40	0	5	1	3	122
St. Joseph	2		0	6	8	1	0	0	0	7	30
St. Louis	19	2		12	13	16	0	8	0	0	206
North Dakota:											
Fargo	0		0	0	1	6	0	0	0	0	5
Grand Forks	0		0	0	0	0	0	0	0	0	
South Dakota:											
Aberdeen	0		0	0	0	1	0	0	0	0	

City reports for week ended March 11, 1933—Continued

State and city	Diph- theria cases	Influenza		Mea- sles cases	Pneu- monia deaths	Scar- let fever cases	Small- pox cases	Tuber- culosis deaths	Ty- phoid fever cases	Whoop- ing cough cases	Deaths, all causes
		Cases	Deaths								
Nebraska:											
Omaha.....	2		0	9	5	5	0	1	0	1	42
Kansas:											
Topeka.....	0		0	68	3	2	0	0	0	3	14
Wichita.....	0		1	1	2	3	0	0	0	3	39
Delaware:											
Wilmington....	0		0	2	1	6	0	1	0	0	26
Maryland:											
Baltimore.....	0	6	4	5	27	70	0	11	0	19	212
Cumberland....	0		0	0	2	2	0	0	0	0	5
Frederick.....	0		0	0	0	1	0	0	0	0	3
District of Col.:											
Washington....	2	3	2	5	17	21	0	15	0	2	145
Virginia:											
Lynchburg.....	1		0	1	2	4	0	0	1	1	9
Richmond.....	0		1	0	3	11	0	1	0	0	40
Roanoke.....	1		0	221	2	1	0	2	1	0	21
West Virginia:											
Charleston.....	0	1	0	1	0	3	0	0	0	3	11
Huntington.....	0			11		0	0	0	0	0	
Wheeling.....	0		9	27	0	0	0	0	0	1	12
North Carolina:											
Raleigh.....	0		0	2	1	2	0	2	0	2	20
Wilmington....	0		0	56	0	0	0	0	0	0	5
Winston-Salem..	1		0	0	1	6	0	2	0	5	14
South Carolina:											
Charleston.....	0	26	2	0	0	1	0	1	0	0	25
Columbia.....	0		2	0	2	0	0	0	0	0	21
Georgia:											
Atlanta.....	5	37	1	7	10	3	0	4	0	18	92
Brunswick.....	0		0	0	0	0	0	0	0	0	3
Savannah.....	0	120	4	0	4	0	0	1	0	0	44
Florida:											
Miami.....	1	2	3	0	1	0	0	4	0	0	37
Tampa.....	1	2	2	0	0	1	0	0	0	1	17
Kentucky:											
Ashland.....	0	5	0	7	0	1	0	0	0	0	
Lexington.....	0	5	0	1	2	2	0	1	0	0	14
Tennessee:											
Memphis.....	1		1	10	9	4	0	7	0	8	80
Nashville.....	0		0	0	6	1	0	0	0	0	38
Alabama:											
Birmingham....	2	19	1	2	5	2	0	3	0	2	54
Mobile.....	1		0	0	2	0	0	0	0	0	18
Montgomery....	2	1		0		0	0		0	2	
Arkansas:											
Fort Smith.....	0			1		0	0		0	0	
Little Rock....	0	2	1	1	4	2	0	1	0	0	5
Louisiana:											
New Orleans....	13	8	8	4	8	11	0	26	2	4	192
Shreveport....	0		0	0	7	0	0	4	0	0	34
Oklahoma:											
Tulsa.....	3		0	7	0	1	1	0	0	1	2
Texas:											
Dallas.....	9	2	2		8	6	0	1	0	0	55
Fort Worth....	1		2	128	6	0	2	2	2	0	36
Galveston.....	0		0	4	3	4	0	0	1	0	18
Houston.....	16		0	107	17	0	5	3	3	0	70
San Antonio....	4		6	14	7	3	0	6	0	0	69
Montana:											
Billings.....	0		0	2	0	0	0	0	0	0	6
Great Falls....	0		0	30	0	1	0	0	0	8	8
Helena.....	0		0	0	0	0	0	0	0	0	5
Missoula.....	0		0	0	0	5	0	0	0	0	2
Idaho:											
Boise.....											
Colorado:											
Denver.....	2	46	0	0	9	15	0	5	1	0	69
Pueblo.....	0		0	0	1	0	0	0	0	1	11
New Mexico:											
Albuquerque....	0		0	0	0	2	0	4	0	1	9
Arizona:											
Phoenix.....	0		0	6	5	10	0	0	0	0	
Utah:											
Salt Lake City..	0		0	3	0	8	0	2	1	7	24
Nevada:											
Reno.....	0		0	0	0	0	0	1	0	0	3

City reports for week ended March 11, 1933—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Small-pox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Washington:											
Seattle.....	0			1		8	0		0	0	
Spokane.....	0			0		1	0		0	0	
Tacoma.....	0		0	1	3	2	0	0	0	2	43
Oregon:											
Portland.....	2		3	5	4	2	2	4	0	0	74
Salem.....	0	4		53		0	0		0	0	
California:											
Los Angeles.....	21	32	6	406	14	70	23	14	3	35	213
Sacramento.....	0	3	1	0	5	16	0	3	0	14	29
San Francisco.....	2	21	1	2	12	9	0	9	0	85	160

State and city	Meningococcus meningitis		Polio-myelitis cases	State and city	Meningococcus meningitis		Polio-myelitis cases
	Cases	Deaths			Cases	Deaths	
New York:				Nebraska:			
New York.....	7	1	0	Omaha.....	1	0	0
New Jersey:				Kansas:			
Newark.....	1	0	0	Wichita.....	1	1	0
Pennsylvania:				Maryland:			
Philadelphia.....	1	3	1	Baltimore.....	0	0	1
Pittsburgh.....	2	1	0	North Carolina:			
Reading.....	1	0	0	Raleigh.....	0	2	0
Indiana:				Georgia:			
Indianapolis.....	-	0	0	Atlanta.....	2	0	0
Illinois:				Louisiana:			
Chicago.....	13	11	0	New Orleans.....	1	0	0
Michigan:				Colorado:			
Flint.....	1	0	0	Denver.....	2	2	0
Wisconsin:				Utah:			
Milwaukee.....	1	0	0	Salt Lake City.....	2	0	0
Iowa:				California:			
Sioux City.....	1	0	0	Los Angeles.....	2	1	0
Missouri:							
Kansas City.....	2	5	0				
St. Joseph.....	2	1	0				

Lethargic encephalitis.—Cases: New York, 2; Trenton, 1; Philadelphia, 1; Chicago, 1; Baltimore, 1.
Pellagra.—Cases: Philadelphia, 1; Charleston, S. C., 1; Savannah, 1; Memphis, 1; Birmingham, 1; Dallas, 1; Los Angeles, 1.
Typhus fever.—Cases: Charleston, S. C., 1; Savannah, 1.

FOREIGN AND INSULAR

GREAT BRITAIN

Scotland—Vital statistics—Quarter ended December 31, 1932.—The Registrar General of Scotland has published the following statistics for the fourth quarter of the year 1932:

Population (estimated).....	4, 880, 000	Deaths from—Continued.	
Births.....	21, 653	Erysipelas.....	36
Birth rate per 1,000 population.....	17. 7	Heart disease.....	2, 509
Deaths.....	16, 812	Influenza.....	554
Death rate per 1,000 population.....	13. 7	Lethargic encephalitis.....	25
Marriages.....	8, 262	Measles.....	7
Deaths under 1 year.....	1, 895	Nephritis, acute.....	64
Deaths under 1 year per 1,000 births.....	88	Nephritis, chronic.....	308
Deaths from—		Paratyphoid fever.....	1
Bronchitis.....	996	Pneumonia.....	248
Broncho-pneumonia.....	838	Pneumonia, lobar.....	391
Cancer.....	1, 886	Poliomyelitis.....	8
Cerebrospinal fever.....	46	Puerperal sepsis.....	58
Diabetes.....	184	Scarlet fever.....	71
Diphtheria.....	100	Syphilis.....	21
Dysentery.....	1	Tetanus.....	2
		Tuberculosis.....	914
		Typhoid fever.....	8
		Whooping cough.....	138

LATVIA

Communicable diseases—November, December, 1932, January, 1933.—During the months of November and December, 1932, and January, 1933, cases of certain communicable diseases were reported in Latvia as follows:

Disease	Cases			Disease	Cases		
	November, 1932	December, 1932	January, 1933		November, 1932	December, 1932	January, 1933
Cerebrospinal meningitis.....	4	2	5	Paratyphoid fever.....		8	12
Diphtheria.....	158	143	51	Poliomyelitis.....	1	1	4
Erysipelas.....	19	19	21	Puerperal septicemia.....		12	6
Influenza.....	191	154	212	Scarlet fever.....	92	62	64
Leprosy.....		1	1	Tetanus.....	1		
Lethargic encephalitis.....			1	Trachoma.....	88	93	71
Measles.....	107	444	490	Typhoid fever.....	89	57	113
Mumps.....	99	44	128	Whooping cough.....	91	44	79

PUERTO RICO

Communicable diseases—Four weeks ended February 25, 1933.—During the four weeks ended February 25, 1933, cases of certain communicable diseases were reported in Puerto Rico as follows:

Disease	Cases	Disease	Cases
Chicken pox.....	20	Ophthalmia neonatorum.....	1
Diphtheria.....	60	Pellagra.....	14
Dysentery.....	945	Puerperal fever.....	3
Erysipelas.....	8	Syphilis.....	173
Filariasis.....	5	Tetanus.....	7
Framboesia, tropical.....	3	Tetanus, infantile.....	10
Influenza.....	241	Trachoma.....	39
Leprosy.....	6	Tuberculosis.....	496
Malaria.....	3,345	Typhoid fever.....	19
Measles.....	226	Whooping cough.....	121
Mumps.....	20		

SWITZERLAND

Communicable diseases—Years 1928-1932.—During the years from 1928 to 1932, inclusive, cases of communicable diseases were reported in Switzerland as follows:

Disease	Cases				
	1928	1929	1930	1931	1932
Cerebrospinal meningitis.....	60	66	58	53	71
Chicken pox.....	2,012	1,748	1,999	1,776	2,218
Diphtheria and croup.....	3,193	3,723	4,548	2,641	2,365
Dysentery.....	2	3	5	8	4
Erysipelas.....	123	142	140	82	102
German measles.....	239	172	62	37	37
Influenza.....	10,000	32,632	405	39,814	35,117
Lethargic encephalitis.....	46	27	13	23	8
Measles.....	11,860	3,606	3,471	9,152	5,599
Mumps.....	936	855	475	620	1,077
Paratyphoid fever.....	66	32	97	187	92
Polioomyelitis.....	104	229	105	351	123
Scarlet fever.....	3,118	3,259	2,983	2,757	3,317
Smallpox.....	1		1		2
Tuberculosis.....				1,465	2,711
Trachoma.....	27	27	11	12	9
Typhoid fever.....	226	201	130	147	174
Typhus fever.....	1				
Whooping cough.....	2,729	1,802	2,200	1,744	2,929

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

From medical officers of the Public Health Service, American consuls, International Office of Public Hygiene, Pan American Sanitary Bureau, health section of the League of Nations, and other sources. The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

[C indicates cases; D, deaths; P, present]

Place	Aug. 21- Sept. 17, 1932	Sept. 18-Oct. 15, 1932	Oct. 16- Nov. 12, 1932	Nov. 13- Dec. 10, 1932	Week ended—													
					December, 1932				January, 1933				February, 1933				March, 1933	
					17	24	31		7	14	21	28	4	11	18	25	4	11
Baluchistan.....	1																	
China:	2																	
Amoy.....	160	34				6												
Canton.....	40	12																
Hankow.....	22	17	1															
Hong Kong.....	209	4																
Kwantung Leased Territory—District of Port Arthur	25	2																
Macao.....	9	1																
Nanking.....	9	1																
Shanghai.....	238	12																
Swatow.....	546	35																
Tientsin.....	33	30	3															
Tsinan—Shantung Province.....	32	1																
Tungfoo.....	P																	
Tsingtao.....	26	6																
Chosen.....	17																	
India:	6,312	3,626	2,411	3,453	1,094	1,008	1,237	945	971									
Bombay.....	3,477	2,072	1,356	1,907	591	565	674	590	504	577								
Calcutta.....			5			1												
Rangoon.....	82	62	60	53	13	11	17	13	27	25	28	30	14	35	41	24	1	
Indo-China (see also table below):	1																	
Yunnan.....	1	5																
Szechwan.....	1	1	1															
Philippine Islands:	1																	
Cebu Province.....	1	10																
Iloilo Province.....	1	11																
Leyte Province.....	43	4																
	15	2																

Place	Sep- tember, 1932	October, 1932			November, 1932			December, 1932			January, 1933			Feb. 1- 10, 1933
		1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-31	
Manila.....	0	1	48	35	7	65	60	121						
Samar Province.....	0	54	38	42	26	4	54	43	75	1				
Siang.....	0	1	1											
Straits Settlements: Singapore.....	0	1												
On vessel: S.S. Tulsan Maru en route Tsingtao to Moji.....	0	1												
Indo-China (French) (see also table above):														
Cambodia ¹	10	3	1		1			1	1					9
	5	3			1									6
	11	4	3	3	4			2	3					9
Cochin-China ¹	8	4	1	2				2	2					9
														6

¹ Reports incomplete.

PLAQUE:

[C indicates cases; D, deaths; P, present]

Place	Aug. 21— Sept. 17, 1932	Sept. 18— Oct. 12, 1932	Oct. 13— Nov. 12, 1932	Week ended—												March, 1933				
				November, 1932				December, 1932				January, 1933					February, 1933			
				19	26	3	10	17	24	31	7	14	21	28	4		11	18	25	4
Angola.....				P																
Argentina:.....																				
Chaco—Villa Angela.....	6																			
Cordoba Province.....																				
Juluy Province.....																				
La Rioja Province.....		4																		
Salta Province.....		7																		
San Luis Province.....																				
San Luis Province 1.....																				
Santa Fe.....																				
Belgian Congo.....																				

¹ Including plague in the United States and its possessions.² Several cases of plague with 1 death were reported at Quines, San Luis Province, Argentina, on Dec. 9, 1932.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

[illegible]

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place	August, 1932	Septem- ber, 1932	Octo- ber, 1932	Novem- ber, 1932	Decem- ber, 1932	Janu- ary, 1933	Febru- ary, 1933
British East Africa (see also table above): Kenya... C	30	15	7	5	8	6	
Zanzibar...							
Province—							
Loja...	2	4				1	
Indo-China...	2		1	2	3	4	2
Madagascar...							
Province—							
Ambositra...	9	30	35	41			
Antsirabo...	8	28	34	35			
Masoatanana...	45	42	73	25			
Miarinarivo...	45	41	73	25			
Moramanga...	1	8	19	35			
Tamstave...	5	8	19	34			
Tananarive...	4	52	225	229			
	4	49	208	228			
	2		1	1			
	2		1	1			
	25	75	178	200			
	35	75	178	190			
Peru...							
Department—							
Ancahuas...							
Lambayeque...							
Libertad...							
Lima...							
Pura...							
Senegal...							
Dakar...	37	7	7	3	6	10	12
Louga...	25	7	2	2	4	4	4
Rufisque...	1	1	2	9			
Thies...	23	8	8	6			
Tiassoune...	21	5	15				
	5		11				
			6				
			7				

* Suspicious cases.

* Reports incomplete.

[illegible]

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[IC indicates cases; D, deaths; P, present]

[illegible]

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER—Continued

[C indicates cases; D, deaths; P, present]

[illegible]

YELLOW FEVER

[C indicates cases; D, deaths; P, present]

Place	Week ended—													
	Aug. 21–Sept. 17, 1932		Sept. 18–Oct. 15, 1932		Oct. 16–Nov. 12, 1932		November, 1932				December, 1932			
							10	26	3	10	17	24	31	Mar. 4, 1933
Brazil:														
Ceara State.....	1	1	1	1	1	1				1				
Parahyba State.....	1	1	1	1	1	1								
Pernambuco State.....	1	1	1	1	1	1								
Piauí State.....	1	1	1	1	1	1								
French West Africa: Guinea.....	1	1	1	1	1	1								
Gold Coast.....	1	1	1	1	1	1								
Guinea (Portuguese): Bissagos Islands.....	1	1	1	1	1	1								
Senegal.....	1	1	1	1	1	1								
Bakel—Kolda.....	1	1	1	1	1	1								
Upper Gambia.....	1	1	1	1	1	1								
Sudan (French): Kaysi.....	1	1	1	1	1	1								

X